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PATENT APPLICATION

ATTORNEY DOCKET NO. 10991754-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Charles J. Burnett

Serial No.: 09/556,503

Examiner: Barry W. Taylor

Filing Date: 04/24/2000

Group Art Unit: 2643

Title: Apparatus And Method For Automated Testing Of the Quality Of Voice Communications
Over Data Networks

ASSISTANT COMMISSIONER FOR PATENTS
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TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith in triplicate is the Appeal Brief in this application with respect to the Notice of Appeal filed on 06/17/2003.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$320.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

(X) (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

(X) one month	\$110.00
() two months	\$410.00
() three months	\$930.00
() four months	\$1450.00

() The extension fee has already been filled in this application.

() (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 50-1078 the sum of \$430.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 50-1078 pursuant to 37 CFR 1.25.

(X) A duplicate copy of this transmittal letter is enclosed.

(X) I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 222313-1450.
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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

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Respectfully submitted,

Charles J. Burnett

By Kyle J. Way

Kyle J. Way

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**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant(s): Charles J. Burnett
Appl. No.: 09/556,503
Filing Date: 4/24/00
Title: APPARATUS AND METHOD FOR THE AUTOMATED TESTING OF
THE QUALITY OF VOICE COMMUNICATIONS OVER DATA
NETWORKS

Group/A.U.: 2643
Examiner: Barry W. Taylor

Docket No.: 10991754-1

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Honorable Commissioner for Patents
Washington, D.C. 20231

APPEAL BRIEF

Sir:

The appeal brief herein is responsive to the notice of appeal mailed on behalf of the appellant on June 17, 2003, having a two-month period of response set to expire on August 17, 2002. A petition and fee for a one-month extension of time is enclosed, thereby extending the response period to September 17, 2003.

In addition, appended to this appeal brief is a current listing of the claims of the subject application.

Real Party in Interest

The subject application is owned by Agilent Technologies, Inc., headquartered in Palo Alto, California, and incorporated in the state of Delaware.

Related Appeals and Interferences

No appeals or interferences related to the subject application are in progress.

Status of Claims

Claims 1-18 stand finally rejected by the examiner. Those claims are still pending and are the subject of this appeal. No other claims are present in the subject application.

Status of Amendments

No amendments have been filed subsequent to the final rejection.

Summary of the Invention

Generally speaking, embodiments of the present invention disclose a slave test unit (claims 1-10) and a method (claims 11-18) for testing voice signal quality of phone connections. Figure 2 shows a possible apparatus embodiment of the invention, unique more for what it does *not* have: a user interface (unlike a typical master test unit, as shown in figure 1). (Please also see page 7, lines 15-23, of the subject application.) Such a slave test unit possesses the capability to perform all operations normally associated with a master test unit (as shown in figure 8). In addition, the slave test unit does not require an onsite human operator being present since the slave test unit receives its instructions from a remote test unit (page 3, lines 13-20), thus saving labor costs (page 3, lines 26-27), as well as hardware costs due to the absence of a user interface (page 7, line 28, to page 8, line 2).

The slave test unit, having at least two phone line connectors that are attachable to separate phone lines (claim 1, 150 and 155 of figure 2, and page 7, lines 15-16), generates and receives electrical signals. Using such signals, the slave test unit is configured to receive and decode test commands from a remote test unit (claim 1, 826 of figure 8, and page 7, lines 23-26). Once decoded, the slave test unit can then execute those test commands which are normally associated with a master test unit. Such commands include typical voice signal quality commands as “loopback” (page 4, lines 17-20, and 821 of figure 8) and “quiet termination” (page 4, lines 20-24, and 822 of figure 8). Also, the ability to encode and transmit commands to another remote test unit (826 of figure 8), generate test signals (823 of figure 8), return current test status (824 of figure 8), and collect test data (825 of figure 8) may be included.

The slave test unit and method of the subject application, by way of the above-mentioned capabilities, allow a variety of test configurations, many not previously contemplated under the prior art. For example, with a single phone line connection between

a master slave unit and a slave test unit according to the subject application, the slave test unit may act as a typical slave, operating in a loopback or quiet termination mode (figure 3, and page 9, lines 10-25). Additionally, the slave test unit, at the prompting of the master test unit, may perform similar tests of the phone connection while the master itself enters loopback or quiet termination mode (page 9, line 26, to page 10, line 4); as a result, the master and slave essentially swap roles. Furthermore, the slave test unit may be directed by the master test unit to “call back” the master test unit, and voice quality tests may be performed by either the master or slave unit (page 10, lines 5-18). Such a capability is important when a digital data network is employed for the phone connection, as the route of a call through the network may depend on which party initiated the call (page 2, line 22, to page 3, line 8). Under the prior art, two master test units, with human operators at each end, was necessary to implement such functionality.

Additionally, given the capability of the slave test unit to operate as a master without human intervention, voice quality tests, which include the generation of test signals, may be performed over phone connections to which the master test unit is not a party (figures 5, 6, and 7). For example, a master test unit may send test commands to a first slave test unit which are then to be performed over one or more phone connections with a second slave test unit (page 10, line 19, to page 11, line 19). As a result, testing of phone connections that are completely remote to any human operator is possible.

Issues

Issue 1 – Whether claims 1, 6, 11 and 16 are patentable under 35 U.S.C. 103 over U.S. Patent Number 5,901,202 (“Lam”) in view of U.S. Patent Number 5,825,849 (“Garland”).

Issue 2 – Whether claims 2 and 15 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Issue 3 – Whether claims 3 and 12 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Issue 4 – Whether claims 4 and 13 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Issue 5 – Whether claims 5 and 14 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Issue 6 – Whether claims 7 and 17 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Issue 7 – Whether claims 8 and 18 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Issue 8 – Whether claims 9 and 10 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Grouping of Claims

For each ground of rejection which appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand or fall together.

Argument

Issue 1 – Whether claims 1, 6, 11 and 16 are patentable under 35 U.S.C. 103 over U.S. Patent Number 5,901,202 (“Lam”) in view of U.S. Patent Number 5,825,849 (“Garland”).

The crux of this particular issue is whether Garland teaches a slave test unit with “at least two phone line connectors attached to separate phone lines,” comprising in part an “executing means including the ability to generate test signals on any of the separate phone lines” (claim 1). While the examiner indicates that “Lam does not explicitly show” this means (page 2 of Paper No. 14), the examiner employs Garland as a reference for the executing means in formulating his rejection. More specifically, the examiner states that “Garland teaches the master (40 figure 1) may command any one of the loop-back devices (46a-46g) to generate test signals on any of the separate lines (entire disclosure).” (Page 6 of Paper No. 14.) For support, the examiner states the following example:

Garland shows the master (40 top right figure 1) commands loop-back device 46a (bottom right figure 1) to test a pair of wires connecting loop-back device 46a and 46c (i.e. first pair of wires) or to test a pair of wires connecting loop-back device 46a and 46b (i.e. second pair of wires) over a second pair of wires and/or any communication links between any loop back device (46a-46g) which clearly read on Applicant’s general claim language.
(Page 6 of Paper No. 14.)

The appellant respectfully disagrees with the examiner's assertion. Each of these "separate phone lines" in Garland to which the examiner refers is attached to a single, separate loop-back device 46. For example, referring to FIG. 1 of Garland, loop-back device 46a is attached to a single local line 11 (column 4, line 17). Likewise, the (master) test unit 40 is attached to a dedicated or dial-up line 42 (column 4, lines 41-43). Therefore, since each device disclosed in Garland is only connected to a single phone line, each can only generate data over a single phone line. To send data over multiple phone lines, multiple devices 46 are required in Garland. The present invention is not limited in such a way.

Apparently, the examiner, in referring to separate phone lines, includes those lines not directly connected to the test unit 40, such as the local lines 11. The present application does not use the term "separate phone lines" in this manner. Instead, the separate phone lines referred to in the subject application are the separate phone lines *that are attached at the slave test unit*. Referring to FIG. 1 of the present application, phone jacks 150 and 155 each connect to a separate phone line. These jacks are represented as the "at least two phone line connections attached to separate phone lines" in claim 1. These separate phone lines are then referenced later in claim 1 with respect to the generation of the test signals "on any of the separate phone lines." This capability allows a slave test unit of the subject application to test phone connections that are remote to a master test unit that initiates the testing, as shown in figures 5-7 of the application, and as described above.

As a result, since neither Lam nor Garland disclose an ability to generate test signals over any of at least two separate phone lines connected at a test unit, the appellant believes that claim 1, as amended, is allowable. Also, as claim 11 incorporates these same limitations regarding generation of test signals on separate phone lines, that claim is considered allowable as well.

Furthermore, as claims 6 and 16, dealing specifically with a master test unit acting as a remote test unit communicating with the slave test unit, incorporate the limitations of claims 1 and 11, respectively, the appellant believes that these claims are allowable in view of the above arguments.

Issue 2 – Whether claims 2 and 15 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Contrary to an assertion by the examiner (page 4 of Paper No. 14), the slave test unit of Lam, the Voice Response Unit (VRU) 180, does not in fact have the ability to encode test commands which are “sent via the phone line connectors to the at least one remote test unit,” as stated in claim 2. This functionality is utilized to allow tests to be executed by a slave not directly connected with the master test unit (page 12, lines 10-12). The slave unit of Lam has the ability to *decode* and *execute* some commands (go on-hook, go off-hook, etc.), but does not have the ability to *encode* any commands to be sent to another remote test unit, such as a master or another slave unit, for execution by that remote test unit. Also, Garland does not teach a slave unit encoding test commands. Only the (master) test unit of Garland encodes commands; the loop-back devices 46 of Garland are not disclosed as having this capability. Garland indicates that the loop-back devices 46 can encode or otherwise configure the *message*, but this message is *not a command* to be executed by the test unit 40 receiving that message. Thus, as neither Lam nor Garland discloses the subject matter of claim 2, the appellant believes the claim is allowable.

Additionally, as claim 15 requires the same encoding of test commands, the appellant believes that claim is also allowable as a result of the above arguments.

Issue 3 – Whether claims 3 and 12 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Concerning the implementation of a dialback command, Lam does not teach a dialback command being executed by the VRU 180, acting as a slave test unit, contrary to the examiner’s contention concerning this point. In that disclosure, Lam indicates that the VRU goes “off-hook” on the remote line 190 (column 3, lines 30-35). Once this has been accomplished, the dialing referred to by the examiner is performed by the human operator or the master processor 110 (column 3, lines 53-62). Thus, the VRU 180 does not perform the dialing, so it is *not* executing a dialback command. No similar feature is even mentioned in the Garland reference. Thus, the appellant feels that claims 3 and 12 are allowable.

Issue 4 – Whether claims 4 and 13 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Although the loop-back devices 46 of Garland perform a loop-back function regarding return of data, this function is not the same as the standard loop-back test

performed by embodiments of the present invention. Garland's loop-back function is a return of a data message, possibly modified or reconfigured in some fashion (column 5, lines 50-60). Thus, the function of the loop-back function in Garland is not to return a test signal intact to test signal quality. However, with respect to the present invention, the specification states that "[t]est units with loopback capability can return an incoming voice test signal without significant modification of the signal so that the initiating test unit can check for changes in the signal as a result of the round-trip transmission of the signal." (page 4, lines 17-20) Thus, the point of the loopback function in the present invention is to prevent modification of the signal when returning the signal back to its source. This definition is the one normally used in the telephone testing industry, and the one used in the present application. Garland does not refer to this particular functionality. Also, Lam does not mention a loopback capability.

Additionally, the examiner states that claim 4 and 13 do not incorporate the features upon which the appellant relies: namely, the specific functionality of the loop-back command. Specifically, the examiner states that "[a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims." (Page 9 of Paper No. 14, citing *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).) The appellant respectfully disagrees. The claim specifically recites the loop-back command in the claim, and that term is defined specifically in the application, as shown above. Furthermore, the term "loop-back" is a term of art in the telephone testing industry, and is regarded as how it is defined in the subject application.

As a result, the appellant believes that claims 4 and 13 are allowable in view of Garland and Lam.

Issue 5 – Whether claims 5 and 14 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

In respectful disagreement with the examiner, Lam does not teach using a quiet termination command. Unlike the off-hook command, as pointed to by the examiner in Lam, the quiet termination command does not cause the slave test unit of the present application to become disconnected from the communication line being tested. Rather, quiet termination is described in the present application as "the ability to generate no outgoing signals" while still remaining connected (column 4, lines 20-24). In other words, a slave test unit in quiet

termination mode will not echo back signals received on the communication line being tested, thereby eliminating a potential signal source.

Likewise, Garland does not teach a quiet termination capability. The examiner has referenced Garland's title, which refers to a "suppressed ringing connection." However, the two concepts are not at all related. According to Garland, "[s]uppressed ringing connections are established over standard voice trunks connecting the central office and a central office service unit (COSU) so that the number of local loops that can be tested simultaneously depends on the number of standard trunks linking the COSU to the switch(es)." (column 3, lines 10-15). Thus, it can be seen that a suppressed ringing connection has nothing to do with a quiet termination capability, as described above.

Additionally, the examiner states that "although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims." (Page 10 of Paper No. 14, citing *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).) The appellant respectfully disagrees, since the term "quiet termination" is used in both claims 5 and 14, and that term is specifically defined within the specification. Also, quiet termination is a well-known term of art in the field of telephone testing, and requires no further explanation.

As a result of the foregoing arguments, the appellant believes that claims 5 and 14 are allowable.

Issue 6 – Whether claims 7 and 17 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

The examiner identifies the remote test unit of claims 7 and 17, identified in those claims as "another slave test unit," as either the master processor 110 or the VRU 180 of Lam (pages 5 and 10 of Paper No. 14). The appellant respectfully disagrees. Both claims 7 and 17 indicate that the remote test unit of claims 1 and 11 is *another* slave test unit, i.e., not the slave test unit recited in independent claims 1 and 11, and not a master test unit. In Lam, the master processor 110 serves as a master test unit, not a slave, and the VRU 180 is the slave test unit that is being compared by the examiner with the slave test unit of claims 1 and 11. Therefore, neither the master processor nor the VRU 180 of Lam qualifies as "another slave test unit." Additionally, Garland does not indicate that any of the slave test units (the loop-back devices 46) ever communicate in any fashion with each other. As a result, the appellant

believes claims 7 and 17 are not anticipated nor made obvious by Lam, Garland, or any combination thereof, and are allowable.

Issue 7 – Whether claims 8 and 18 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

Lam discloses the dialing of a destination telephone number using DTMF (column 3, lines 53-58). However, contrary to the examiner's assertion (pages 5 and 10 of Paper No. 14), Lam does not disclose the use of DTMF for the transmission of test commands received by the slave test unit, as cited in claims 8 and 18. Hence, Lam does not disclose the subject matter of those claims. As Garland does not mention transmission of test commands via DTMF either, the appellant believes claims 8 and 18 are allowable under Lam in view of Garland.

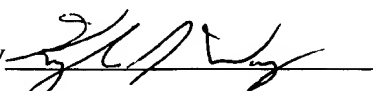
Issue 8 – Whether claims 9 and 10 are patentable under 35 U.S.C. 103 over Lam in view of Garland.

The terms 'E&M' and 'FXO/FXS', as used in these claims, refer to specific types of standardized communication ports utilized in telephone equipment. Each of these standards represents different signaling specifications, connectors, connector pinouts, and the like. Such ports are commonly found on PBX systems in offices and other establishments, both domestically and abroad. As a result, general references in Lam to "lines of other carriers" (column 1, line 21) or lines that may be tested "simply by conducting a conversation with a subscriber" (column 4, lines 9-10), as referred to by the examiner (pages 5 and 10 of Paper No. 14) do not in any way deal with the specific ports mentioned in claims 9 and 10. Thus, the appellant believes those claims are allowable.

Conclusion

As a result of the foregoing arguments, appellant believes that claims 1-18 comply with the provisions of 35 USC 102 and 103, and reversal of the examiner's rejections is respectfully requested.

Respectfully submitted,

by 

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September 16, 2003

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APPENDIX: LISTING OF CLAIMS

Claim 1 (previously presented): A slave test unit for testing voice signal quality over phone connections, comprising:

at least two phone line connectors attached to separate phone lines;

means for transmitting and receiving electrical signals via the phone line connectors, the electrical signals being transmitted and received between the slave test unit and at least one remote test unit, the electrical signals received from the remote test unit comprising test commands;

means for decoding the test commands from the electrical signals received from the remote test unit, and;

means for executing the test commands, the executing means including the ability to generate test signals on any of the separate phone lines, the test commands being received exclusively from the remote test unit.

Claim 2 (previously presented): The slave test unit of claim 1, further comprising means for encoding the test commands into the electrical signals sent via the phone line connectors to the remote test unit.

Claim 3 (original): The slave test unit of claim 1, wherein one of the test commands is a dialback command.

Claim 4 (original): The slave test unit of claim 1, wherein one of the test commands is a loopback command.

Claim 5 (original): The slave test unit of claim 1, wherein one of the test commands is a quiet termination command.

Claim 6 (original): The slave test unit of claim 1, wherein the remote test unit is a master test unit possessing a human operator interface.

Claim 7 (original): The slave test unit of claim 1, wherein the remote test unit is another slave test unit.

Claim 8 (original): The slave test unit of claim 1, wherein the test commands are encoded and received as DTMF signals.

Claim 9 (original): The slave test unit of claim 1, wherein at least one of the phone line connectors is adapted for FXO/FXS telephone ports.

Claim 10 (original): The slave test unit of claim 1, wherein at least one of the phone line connectors is adapted for E&M telephone ports.

Claim 11 (previously presented): A method for testing voice signal quality over phone connections, comprising the steps of:

establishing at least two phone connections, whereby the phone connections are made with at least one remote test unit;

receiving electrical signals, the electrical signals being received from the remote test unit, the electrical signals comprising test commands;

decoding the test commands from the electrical signals being received from the remote test unit; and

executing the test commands, the executing step including the ability to generate test signals on any of the phone connections, the test commands being received exclusively from the remote test unit.

Claim 12 (original): The method of claim 11, wherein one of the test commands executed in the executing step is a dialback command.

Claim 13 (original): The method of claim 11, wherein one of the test commands executed in the executing step is a loopback command.

Claim 14 (original): The method of claim 11, wherein one of the test commands executed in the executing step is a quiet termination command.

Claim 15 (previously presented): The method of claim 11, wherein one of the test commands executed in the executing step is an encoding and transmission of the test commands via at least one of the phone connections.

Claim 16 (original): The method of claim 11, wherein the remote test unit is a master test unit.

Claim 17 (original): The method of claim 11, wherein the remote test unit is a slave test unit.

Claim 18 (original): The method of claim 11, wherein the test commands of the receiving step are encoded by the remote test units as DTMF signals.